REQUEST FOR PURCHASE IN EXCESS OF $20,000/CHANGE ORDER

To: MAYOR AND CITY COUNCIL

From: Susie Miller, Braemar Arena General Manager

Date: January 6, 2015

Subject: Replacement of East Arena Low E Ceiling

Agenda Item #: V.S.

The Recommended Bid is

☒ Within Budget

☐ Not Within Budget

Date Bid Opened or Quote Received:
December 3, 2014

Bid or Expiration Date:
February 1, 2015

Company:
Energie Innovation Inc.
Custom Ice USA
Twin City Acoustics, Inc

Amount of Quote or Bid:
$47,660.00 (Inc. Demo of Existing Ceiling)
$60,000-$70,000 (see attached email)
No response after multiple requests.

Recommended Quote or Bid:
Energie Innovation Inc. $47,660.00

General Information:
The existing East Arena Low Emissivity Ceiling is panels that are strung the width of the sheet of ice supported by cabling. The intent of the Low E Ceiling is to provide energy efficiency, brighten the space and provide a more appealing look. The Low E Ceiling installed in the East Arena is in poor condition and falling down. Currently there are multiple tears and the fabric is hanging down from the ceiling.

Staff recommends replacing the existing panels in the East Arena with an Astro-Rink Low Emissivity ceiling. The Astro-Rink ceiling is reflective insulation containing two layers of bubble film that is reinforced with metalized film on both sides. The material is framed-in for durability as well as appearance. The bubble insulation material provides an R value and the material is 95% reflective on both sides to provide increased energy efficiency. In 2013 the same product was installed in the West Arena.

The Astro-Rink product will provide:

- 25% average reduction in refrigeration costs per year
- Reduced radian loads to the ice surface
- Increased roof insulation
- A condensation and drip-free arena
- 40% increase in light levels
- Improved acoustics

This purchase is a 2015 approved CIP item. $75,000 is budgeted for this project. A rebate application was submitted to Xcel Energy. Bids were sought from Custom Ice and Twin Cities Acoustics. Custom Ice sent an email stating the cost would be in the range of $60,000-$70,000 but would not give an exact amount without onsite visit. Twin Cities Acoustics did not respond to multiple requests.

Attachments:
Proposal from Energie Innovation, Inc.
Email from Custom Ice USA
Custom Efficiency Application – Xcel Energy

ENERGIE
INNOVATION INC.

December 3, 2014

Reference: ASTRO-RINK low-emissivity reflective insulated ceiling at the Braemar Arena, Edina, MN East Rink

Dear Mrs. Miller,

First of all, let me thank you for your interest in our revolutionary reflective insulating and low emissivity ceiling products. Energie Innovation is a company that specializes in the supply and installation of reflective insulating materials to the growing market of energy conservation industries, from residential and commercial to industrial and agricultural applications, since 1989.

Let me now introduce our **ASTRO-RINK** product, the best low emissivity ceiling for your arena or curling club projects.

ASTRO-RINK reflective insulation is composed of 2 layers of bubble film with reinforced aluminum metalized films on both sides (MPET/Bubble/Bubble/MPET). These bubbles form trapped air spaces between the aluminum surfaces to give the structure excellent "R" values. Because **ASTRO-RINK** is also impervious to moisture and air currents, it is an ideal convection and vapor barrier. The material is reinforced to prevent damages caused by pucks and other flying objects; therefore protective netting is not required. Most importantly **ASTRO-RINK** reflects heat away from your ice surface.

You will benefit from:

- **25 % average reduction in refrigeration costs per year**
- **Reduced radiant loads to the ice surface**
- **Increased roof insulation**
- **A condensation and drip free arena**
- **40 % increase in the light levels**
- **Improved acoustics**

In Addition, the **ASTRO-RINK** low emissivity ceiling is completely maintenance free for life and all our reflective insulation products are considered user friendly.

Many of our clients have benefited from incentive programs offered by their local utility companies. We at Energie Innovation can help you benefit from these incentives by providing detailed feasibility study analysis for the installation of our **ASTRO-RINK** reflective ceiling.

I would like to take this opportunity to thank you for taking the time and discovering our revolutionary product. Feel free to visit us on our web site at www.energie-innovation.com and discover the potential for future energy savings and improved skating environment.

Please feel free to contact me if you have any questions or require additional information.

Best regards,

Robert Baljak

Robert Baljak
Energie Innovation Inc.

ENERGIE
INNOVATION INC.
2970 Halpern Street
St-Laurent, QC
H4S 1R2, Canada
Tel: 514-334-3783 Fax: 514-334-3925

Date: December 3, 2014

ESTIMATION No 2014-767

Name:	**Braemar Arena** **Attn: Susie Miller**
Address:	7501 Ikola Way
City:	Edina
State:	MN
Zip:	55439
Tel / Fax:	T. 952-833-9502; F. 952-833-9501; smiller@EdinaMN.gov

Qty	Description	Unit Price	TOTAL (USD)
	Project: Astro-Rink low emissivity ceiling installation in the East Rink at the Braemar Arena, Edina, MN		
	To supply and install an **Astro-Rink** low emissivity ceiling in one ice rink. The reflective insulated ceiling will be installed below the steel deck and will cover the entire area over the ice surface. The new ceiling will also extended outside of the ice surface by approximately 48" on the bleachers side and will stop approximately 18" from the 3 exterior walls on the other sides. **Approximate area to be covered will be 98' W x 204' L**		$45,980.00
	Remove existing cable hung low emissivity ceiling and accessories. The waste container to be provided by the client.		$1,680.00
	Astro-Rink reflective insulation is composed of 2 layers of bubble film with reinforced aluminum metalized films on both sides (MPET/Bubble/Bubble/MPET).		
		Total	**USD $47,660.00**

The price quoted for installation of **Astro-Rink** insulation is as described:

Galvanized "U" bars will be used to build up the ceiling framework. They will be attached to the existing steel deck with the help of HEX head zinc plated self-drilling screws at 4' center to center. This built-up framework will be used to keep the material in place. Permanent support is then ensured by the use of double sided adhesive tape and HEX head zinc plated sharp point screws spaced approximately 18" apart, through the insulation and into the framework. Finally, all seams will be sealed with 3" reinforced aluminum tape. The rolls of reflective insulation will run the length of the building. Warranty: 5 years on labor and lifetime on **Astro-Rink** material.

Price is valid for 60 days and does not include applicable taxes. Price does not include building permit or engineering fees if applicable. Priced using non-union labor.

Robert Baljak *December 3, 2014*

Robert Baljak
Energie Innovation Inc.

Date

ENERGIE
INNOVATION INC.
2970 Halpern Street
St-Laurent, QC
H4S 1R2, Canada
Tel: 514-334-3783 **Fax: 514-334-3925** **Date: December 3, 2014**

Name:	**Braemar Arena** **Attn: Susie Miller**
Address:	7501 Ikola Way
City:	Edina
State:	MN
Zip:	55439
Tel / Fax:	T. 952-833-9502; F. 952-833-9501; smiller@EdinaMN.gov

Cost Breakdown, Astro-Rink Low-E Ceiling Project, Braemar Arena (East Rink)

Materials and Equipment:	31,610.00$
Engineering:	850.00$
Labour:	15,200.00$
Grand Total:	47,660.00$

Ice surface Area: 85' x 200'
Ceiling Height: 22'
New low–e ceiling will cover a ceiling area of: 98' x 204'

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ASTRO-RINK low emissivity reflective insulation is composed of 2 layers of bubble film with reinforced aluminum metalized films on both sides (MPET/Bubble/Bubble/MPET). These bubbles form trapped air spaces between the metalized surfaces to give the structure excellent "R" values. **ASTRO-RINK** also meets current building codes relating to flame spread and smoke developed classifications for insulation in exposed applications, in Canada and the United States. Because **ASTRO-RINK** is also impervious to moisture and air currents, it is an ideal convection and vapor barrier. The material is reinforced to prevent damages caused by pucks and other flying objects; therefore protective netting is not required. Most importantly, **ASTRO-RINK** reflects heat away from your ice surface and thus reduces your energy costs.

ASTRO-RINK Detailed Specifications

Physical Properties	Values
Thickness	8mm (5/16 inch)
Weight	381 g/m^2 (1.25 oz./ft^2)
Temperature Range	-50 to 82 °C (-58 to 180 °F)
Flame spread and Smoke Developed Index (ASTM E-84-05)	Class 1 / Class A, 0 and 15 respectively
Flame spread and Smoke Developed Value (CAN/ULC-S102)	0 and 33 respectively
Heat Release, Flame Spread (NFPA 286 and IBC 803.2.1 2006 Edition)	Product Meets the Criteria
MEA 21-08-M Product Acceptance	Accepted
Linear Shrinkage	None
Bleeding and Delamination (ASTM C 1224-03)	None
Pliability (ASTM C 1224-03)	No cracking or delamination
Water Vapor Transmission (ASTM E 96-05)	0.005 perms
Resistance to the Growth of Fungi (ASTM C 1338-00)	No growth
Puncture Resistance (ASTM F 1306)	3 200 kPa (464 lbs/in^2)
R-value	RSI 0.94 (R 5.34)
Emittance (ASTM C 1371-04a)	0.047
Reflectivity	95%

Energie Innovation Inc.
2970 Halpern Street, Saint-Laurent (Quebec) H4S 1R2
T. 514-334-3783; 1-800-363-0931; F. 514-334-3925
info@energie-innovation.com www.energie-innovation.com

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Specifications for the Installation of Astro-Rink Reflective Insulation on Ceiling Arenas and Other Buildings below steel corrugated deck

A. Scope of Work

The work required under this section consists of area preparation, supply of all materials, related items and labor necessary to complete the work as described in the item E – Installation Procedures.
The contractor must furnish and install **Astro-Rink** low emissivity reflective insulation. The material used for the reflective ceiling must be **Astro-Rink,** supplied by Energie Innovation Inc. 2970 Halpern, Saint-Laurent, Quebec, H4S 1R2, Tel (514) 334-3783; 1-800-363-0931 Fax (514) 334-3925. The low-e ceiling will be installed below the existing steel deck and spaced 48 inches centre to centre and supported by galvanized steel U-bars. The main web joist will remain exposed.

We must also obtain a uniform surface with the least joints possible. All joints will have to be covered with reinforced aluminum tape. It is also imperative to leave a minimum 12" air space along both side walls for the length of the building; this will allow for natural air circulation above the ceiling and prevent future condensation issues. It is important that the insulation is properly fastened to the steel U-bars to create a uniform finish and a thermal seal. The contractor must therefore seal all ceiling openings with reinforced aluminum tape.

B. Preparation of Area

The area to be covered shall be clear of any obstructions, including signs, lights, equipment, etc..., which would hinder proper installation.

C. Products and Materials

Reflective Insulating Membrane

1. **Astro-Rink** is composed of 2 layers of bubble film with reinforced metalized aluminum films on both sides (MPET/Bubble/Bubble/MPET). The material is reinforced to prevent damages caused by pucks and other flying objects; therefore protective netting is not required.

Physical Properties	Values
Thickness	8mm (5/16 inch)
Weight	381 g/m^2 (1.25 oz./ft^2)
Temperature Range	-50 to 82 °C (-58 to 180 °F)
Flame spread and Smoke Developed Index (ASTM E-84-05)	Class 1 / Class A, 0 and 15 respectively
Flame spread and Smoke Developed Value (CAN/ULC-S102)	0 and 33 respectively
Heat Release, Flame Spread (NFPA 286 and IBC 803.2.1 2006 Edition)	Product Meets the Criteria
MEA 21-08-M Product Acceptance	Accepted
Emissivity	0.047
Reflectivity	95%

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R-Values (Enclosed in a wall space between two 19mm (3/4 in) Furring Strips	
➢ Down heat flow (summer)	R-15
➢ Horizontal heat flow (walls)	R-7.3
➢ Up heat flow (winter)	R-5.4

Note: **Astro-Rink's** ability to reflect heat in open applications is not fully measured in these tests. It is that extra reflective capability which makes it possible for **Astro-Rink** to keep people comfortable all year long as well as provide substantial energy savings on refrigeration costs.

2. Steel U-Bars (studs)

Width: 2 1/2 inches
Height: 1 1/4 inches
Thickness: 25 gauge
Material: galvanized steel

3. Aluminum Sealing Tape

Double Sided Tape: Echotape SC-211US, 2.5" wide or equivalent.
Aluminum Tape: Echotape FS-K7330, 3" wide or equivalent.

4. Anchors

All anchoring of the **Astro-Rink** reflective insulating membrane onto steel framing is done by the use of zinc plated sharp point Hexagonal #10 screws ¾" in length.

Anchoring of the steel framing U-bars onto the existing steel deck is done by the use of zinc plated self-drilling Hexagonal #12-14 screws 2" in length.

D. Equipment

Contractor shall provide installation equipment, including ladders, boom or scissor lifts, swing stages, power hand tools, etc… as required to perform the work and achieve the results as specified herein.

E. Installation Procedures

1. Steel Framework

Most ceiling installations require the use of one scissor lift for working over the ice surface and a boom lift for reaching in corners and over the seating areas.

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2. Spacing and Attaching Rails to Frame

At the starting point, attach steel rails with HEX head self-drilling zinc plated screws at right angle to the steel deck at spaces of 48" centres. For faster installation, it is recommended that the rails be installed to all roof deck before the installation of the reflective insulation.

Note: Echotape SC-211US double-sided tape shall be applied to the wide face of the U-Bars before or after being installed. The protective paper on the tape shall be removed as the reflective insulation is being installed.

3. Attaching R.I. Membrane to Rails

The **Astro-Rink** reflective insulation must be installed from a single roll in each row of metal rails. The rolls will be 4 foot wide and long enough to cover the entire row. Mount the Foil roll on the lift in a manner that allows it to unroll as the lift moves along below the U-Bars. Remove the protective paper from the double-sided tape while the lift moves along. Beginning at least 12" from the wall, attach the first strip of reflective insulation to the tape on the rails. Pull the sheet of reflective insulation tight and secure it with 3/4" HEX head sharp point zinc plated spaced at 16" to 24" intervals on both sides of the sheet to prevent any sagging of the material. Proceed in this manner by moving the lift a few feet at a time, pulling the foil tightly before pressing it onto the adhesive tape on the U-Bars and follow it up by fastening the screws at the proper spacing. Continue this procedure until the sheet is in place for the full length of the building.

4. Obstructions

There may be obstructions such as steel braces, lights, conduit pipes, water sprinklers, etc. which involves the cutting of the reflective insulation and fitting it around them. After the above has been completed, tightly seal around the damaged areas with Echotape FSK Aluminum Tape.

5. Applying Echotape FSK To Joints

After the first sheet of **Astro-Rink** has been installed the full length of the building, each of the following sheets create a joint where they meet. Each such joint shall be sealed tightly with 3" Wide Echotape FSK Aluminum Tape.

Note: all intrusions and joints must be carefully sealed with Echotape FSK Aluminum tape.

6. Clean-Up

Upon completion of the contract, the contractor shall clean-up all surplus materials and debris from the site and deposit it in proper containers.

The site of each project shall be left in the same order as at the start of the project, to the satisfaction of the owner.

2970 Halpern, Saint-Laurent (Quebec) Canada H4S 1R2
Tel: (514) 334-3783; 1-800-363-0931 Fax: (514) 334-3925
info@energie-innovation.com www.energie-innovation.com

From: Jake Miller [mailto:jmiller@customicerinks.com]
Sent: Tuesday, December 16, 2014 5:13 PM
To: Susie Miller
Subject: Re: Custom Ice Low-E Ceiling Inquiry

Hi Susie,

This is not something that we like to do. The sealed insulated ceiling creates a temperature difference between the air below and above the Low-E resulting in significant condensation arising on the bottom of the fabric and will rain on the ice.

Our material still allows some breathing which minimizes the condensation build up. It is also significantly cheaper as the insulated material installed will be $60,000 to $70,000.

Jake Miller
Custom Ice Inc.

Sent from my iPhone

> On Dec 16, 2014, at 5:45 PM, Susie Miller <smiller@EdinaMN.gov> wrote:
>
> Hi Jake! I want to astro rink insulated and framed in not the fabric on cables.
>
> Sent from my iPhone
>
> On Dec 16, 2014, at 3:57 PM, Jake Miller
<jmiller@customicerinks.com<mailto:jmiller@customicerinks.com>> wrote:
>
> Hi Susie,
>
> Thanks for your interest with Custom Ice. Sight unseen, I will have to keep the pricing budgetary as I would have to see some pictures or drawings to see what exactly is up in the ceiling that we need to cut the material around. Based on the information you have provided I would give a budgetary range of $ 30,000 - $ 40,000 for the EnerShield-AD material suspended on aircraft cables. I have attached a cut sheet on the material to this email for your reference.
>
> This budget range includes all materials, hardware, labour, man lift rental, insurance and freight. It will take approximately 12-14 days to install and does not include the ducting of any vents, lowering of any lights, fans, sprinklers or installation/removal of any other equipment.
>
> Hopefully this is enough to get you started and let me know how I can help.
>
> Sincerely,
>
> Jake Miller
> CUSTOM ICE inc. / ENERGY ICE
> C2-3375 North Service Rd., Burlington, ON CANADA L7N 3G2
> Toll Free: 1-866-887-8840 Local: 905-632-8840 Ext.34
> Cell: 905-978-3060 Fax: 905-632-6723
> jmiller@customicerinks.com<mailto:blenko@customicerinks.com>
www.customicerinks.com<http://www.customicerinks.com/>
> <ENERSHIELD AD spec sheet.doc>

Custom Efficiency Application

Xcel Energy®
RESPONSIBLE BY NATURE®

Version	1.01
Last Update	25/03/2014

General Information - All Applicable Fields Required*	
*Company Name:	Braemar Ice Arena
*Installation Address:	4801 W 50TH ST
*Installation City:	EDINA
*Installation State:	Minnesota
*Installation Zip Code:	55424
Project Contact Name :	Ms. Susie Miller, General Manager
Project Contact Phone Number:	(952) 833-9502
Project Contact E-mail:	smiller@edinamn.gov
*Project Description:	
*Proposed Equipment Description:	
*Proposed Equipment Quantity:	
*Technology:	Low-E Ceilings
*Baseline Equipment Status:	

Vendor Information - As Applicable	
Vendor:	Energie Innovation Inc.
Vendor Contact Name:	Robert Baljak
Vendor Address:	2970 Halpern Street
Vendor City, State, Zip:	Saint-Laurent, Quebec, H4S 1R2, Canada
Vendor Phone Number:	800-363-0931
Vendor E-mail:	info@energie-innovation.com
Xcel Energy Trade Partner ID:	
Secondary Vendor:	
Secondary Xcel Trade Partner ID:	

Xcel Energy Information - Internal Use Only	
*Opportunity ID:	
*Account Manager:	Jennifer Abbott
Sales Engineer:	
*Utilities Served:	Electric Only
*Electric Premise Number:	302395182
*Electric Rate Code:	A14 | General Service | Secondary
*This project was part of a:	

*Xcel Energy Information section incomplete!

Low-E Ceilings: OID

Version 1.01

Last Update 25/03/2014

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General Information

Please provide a general description of the system:

Area of rink		sq ft
Ice arena system refrigerant		
Ice arena system compressor (make and model number)		
Ice arena system condensing unit (make and model number)		
Occupied space temperature		°F
Unoccupied space temperature		°F
Does the arena have any existing low-e ceiling material?	No	

Arena Schedule

What day of the year is the ice installed?		
What day of the year is the ice taken out?		
How many hours per day is the arena occupied?		hours

Proposed System Information

Length of new low-e ceiling curtain	204	ft
Width of new low-e ceiling curtain	98	ft
Height from rink surface to new low-e ceiling curtain	22	ft
Low-E ceiling material (make and model number)	Astro-Rink II, (ARII)	
Emissivity of new low-e ceiling material	0.047	%
R-Value of new low-e ceiling material	5.4	R-value

Cost Breakout (excluding tax and shipping)

Equipment	$	31,610.00
Engineering	$	850.00
Installation	$	15,200.00
Other (explain)		
Comments		
TOTAL	$	47,660.00